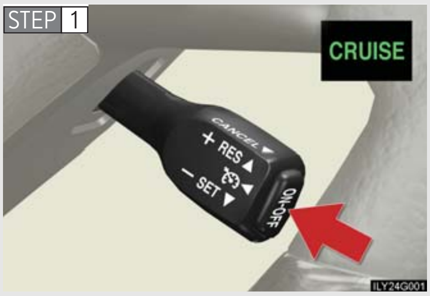
Cruise control

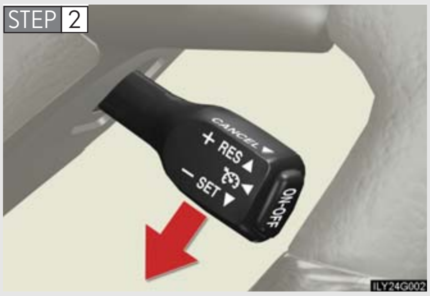
Use the cruise control to maintain a set speed without using the accelerator.

Set the vehicle speed



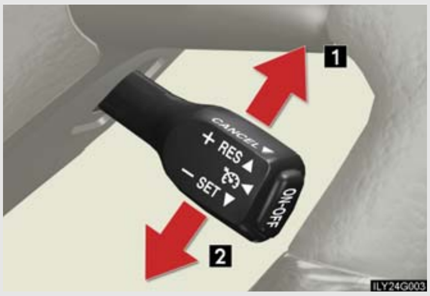
Turn the "ON-OFF" button ON.

Push the button once more to deactivate the cruise control.



Accelerate or decelerate to the desired speed and press the lever down to set the cruise control speed.

Adjusting the speed setting



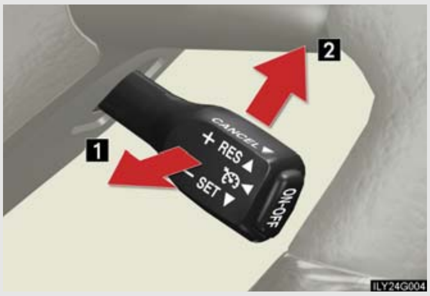
1 Increase speed

2 Decrease speed

Hold the lever until the desired speed setting is obtained.

Fine adjustment of the set speed (approximately 1.0 mph [1.6 km/h]) can be made by lightly pressing the lever up or down and releasing it.

Canceling and resuming regular acceleration



1 Cancel

Push the lever towards you to cancel cruise control.

The setting is also canceled when the brake pedal is depressed.

2 Resume

To resume cruise control and return to the set speed, push the lever up.

Cruise control can be set when

- The shift lever is in the “D” or “4”, “5”, or “6” range of “S”.
- Vehicle speed is between approximately 25 mph (40 km/h) and 125 mph (200 km/h).

Accelerating

The vehicle can be accelerated normally. After acceleration, the set speed resumes.

Automatic cruise control cancelation

The set speed is automatically canceled in any of the following situations.

- Actual vehicle speed falls more than 10 mph (16 km/h) below the preset vehicle speed
- Actual vehicle speed is below 25 mph (40 km/h)
- VSC is activated

If the cruise control indicator light flashes

Turn the “ON-OFF” button off once, and then reactivate the system.
If the cruise control speed cannot be set or if the cruise control cancels immediately after being activated, there may be a malfunction in the cruise control system. Have the vehicle inspected by your Lexus dealer.

CAUTION

- **To avoid operating the cruise control by mistake**

  Keep the "ON-OFF" button off when not in use.

- **Situations unsuitable for cruise control**

  Do not use cruise control in any of the following situations.
  Doing so may result in control of the vehicle being lost and could cause serious or fatal accident.

  - In heavy traffic
  - On roads with sharp bends
  - On slippery roads, such as those covered with rain, ice or snow
  - On steep hills
  - On winding roads

Dynamic radar cruise control (if equipped)

Dynamic radar cruise control supplements conventional cruise control with a vehicle-to-vehicle distance control. In the vehicle-to-vehicle distance control mode, the vehicle automatically accelerates or decelerates in order to maintain a set following distance from vehicles ahead.

Select cruise mode



Selecting vehicle-to-vehicle distance control mode

1 Turn the "ON-OFF" button ON.

Push the button once more to deactivate.



Selecting conventional constant speed control mode

1 Turn the "ON-OFF" button ON.

2 Switch to constant speed control mode.
(Push and hold for approximately 1 second.)

Push the button once more to deactivate.

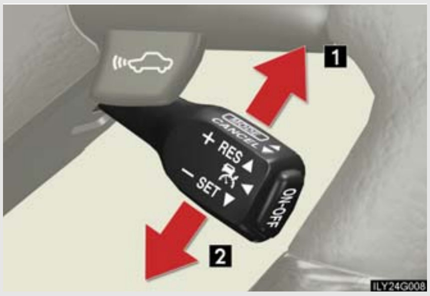
Vehicle-to-vehicle distance control mode is always reset when the engine switch is switched to "IG-ON" mode.

n Driving in the selected cruise control mode



Accelerate or decelerate to the desired speed and press the lever down to set.

n Adjusting the speed setting



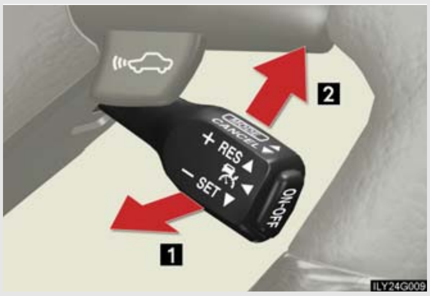
1 Increase speed

2 Decrease speed

Hold the lever until the desired speed setting is displayed.

In the constant speed control mode, fine adjustment of the set speed (approximately 1.0 mph [1.6 km/h]) can be made by lightly pressing the lever up or down and releasing it.

n Canceling and resuming the speed setting



1 Cancel

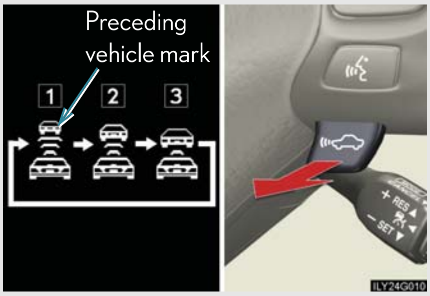
Push the lever towards you to cancel cruise control.

The setting is also canceled when depressing the brake pedal.

2 Resume

To resume cruise control and return to the set speed, push the lever up.

Changing the vehicle-to-vehicle distance



Each pull of the switch changes the vehicle-to-vehicle distance

1. Long
2. Medium
3. Short

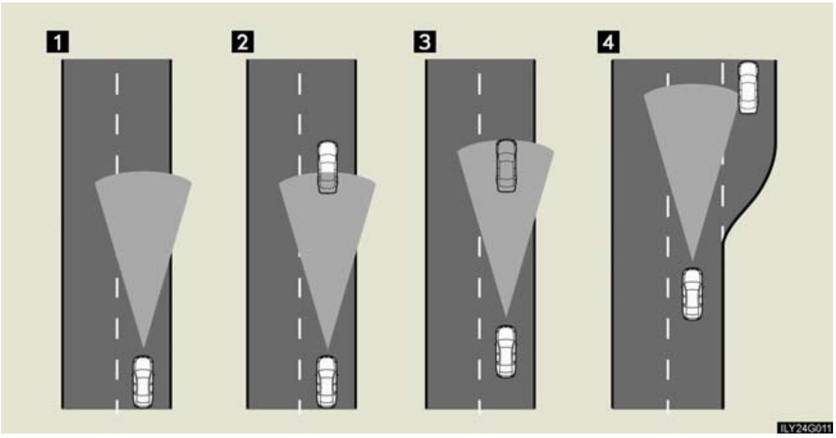
The vehicle-to-vehicle distance is automatically set to the long mode when the engine switch is set to the "IG-ON" mode.

A vehicle mark is displayed ahead if one is detected.

Cruising in vehicle-to-vehicle distance control mode

This mode employs a radar sensor to detect the presence of vehicles within 400 ft. (120 m) ahead and to judge the distance between your vehicle and those vehicles.

Note that vehicle-to-vehicle distance will close when traveling on long downhill slopes.



1. Example of constant speed cruising (when there are no vehicles ahead): When set to 62 mph (100 km/h)

   The vehicle travels at the speed set by the driver. The desired vehicle-to-vehicle distance can also be set by operating the vehicle-to-vehicle distance switch.

2. Example of deceleration cruising (when the vehicle ahead is driving slower than the set speed): When fixed speed cruising is set at 62 mph (100 km/h) and the vehicle ahead is driving at 50 mph (80 km/h)

   When a vehicle is detected running ahead of you, in the same lane, the system automatically decelerates your vehicle. When a greater reduction in vehicle speed is necessary, the system applies the brakes. A warning tone warns you when the system cannot decelerate sufficiently to prevent your vehicle from closing on the vehicle ahead.

3 Example of follow-up cruising (when following a vehicle driving slower than the set speed): When the speed is set to 62 mph (100 km/h) and the vehicle ahead is driving at 50 mph (80 km/h)

The system continues follow-up cruising while adjusting for changes in the speed of the vehicle ahead in order to maintain the vehicle-to-vehicle distance set by the driver.

4 Example of acceleration (when there are no longer vehicles driving slower than the set speed in the lane ahead): When the speed is set to 62 mph (100 km/h) and the vehicle ahead driving at 50 mph (80 km/h) is out of the lane

When the vehicle ahead of you executes a lane change, the system slowly accelerates until the set vehicle speed is reached. The system then returns to fixed speed cruising.

Dynamic radar cruise control warning lights, messages and buzzers

Warning lights, messages and buzzers are used to indicate a system malfunction or to alert you to the need for caution while driving. (→P. 458)

The dynamic radar cruise can be set when

- The shift lever is in "D" or the "4", "5" or "6" range of "S".
- Vehicle speed is between approximately 27 mph (43 km/h) and 87 mph (139 km/h).

Accelerating

The vehicle can be accelerated normally. After acceleration, the set speed resumes.

Automatically canceling vehicle-to-vehicle distance control

Vehicle-to-vehicle distance control driving is automatically canceled in the following situations.

- Vehicle speed falls below 25 mph (40 km/h)
- VSC is activated
- The windshield wipers are operating at high speed
- The mode select switch is set to snow mode
- The sensor cannot operate correctly because it is covered in some way

Vehicle-to-vehicle distance control driving must be reset by turning the "ON-OFF" button on again.

If vehicle-to-vehicle distance control driving is automatically canceled for any other reason, there may be a malfunction in the system. Contact your Lexus dealer.

Automatically canceling constant speed control

The set speed is automatically canceled in the following situations.

- Actual vehicle speed is more than 10 mph (16 km/h) below the preset vehicle speed
- Vehicle speed falls below 25 mph (40 km/h)
- VSC is activated

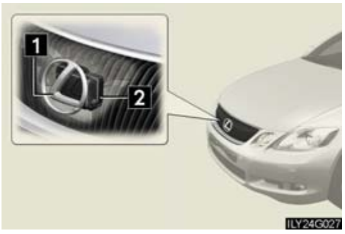
Vehicle-to-vehicle distance settings

Select a distance from the table below. Note that the distances shown correspond to a vehicle speed of 50 mph (80 km/h). Vehicle-to-vehicle distance increases/decreases in accordance with vehicle speed.

Distance options	Vehicle-to-vehicle distance
Long	Approximately 210 ft. (65 m)
Medium	Approximately 150 ft. (45 m)
Short	Approximately 100 ft. (30 m)

Radar sensor and grille cover

Always keep the sensor and grille cover clean to ensure that the vehicle-to-vehicle distance control operates properly. (Some obstructions, such as snow, ice or plastic objects, cannot be detected by the obstruction sensor.)
Dynamic radar cruise control is canceled if an obstruction is detected.



1 Grille cover

2 Radar sensor

Certification

▶ For vehicles sold in the U.S.A.

FCC WARNING
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC RF exposure information
This device complies with the FCC RF exposure requirements.

▶ For vehicles sold in Canada

Operation is subject to the following two conditions; (1) This device may not cause interference, and (2) This device must accept any interference received, including interference that may cause undesired operation of the device.

CAUTION

n **Before using dynamic radar cruise control**

Do not overly rely on vehicle-to-vehicle distance control.
Be aware of the set vehicle speed. If automatic deceleration/acceleration is not appropriate, adjust the vehicle speed, as well as the distance between your vehicle and vehicles ahead by applying the brakes, etc.

n **To avoid operating the dynamic radar cruise control by mistake**

Keep the "ON-OFF" button off when not in use.

n **Situations unsuitable for dynamic radar cruise control**

Do not use dynamic radar cruise control in any of the following situations.
Doing so may result in inappropriate control of speed and could cause serious or fatal accident.

l In heavy traffic

l On roads with sharp bends

l On winding roads

l On slippery roads, such as those covered with rain, ice or snow

l Where there are sudden changes between sharp up and down gradients

l At entrances to expressways

l When weather conditions are bad enough that they may prevent the sensors from functioning correctly (fog, snow, sandstorm, etc.)

l Where buzzer can be heard often

CAUTION

When the radar sensor may not be correctly detecting the vehicle ahead

Apply the brakes as necessary when any of the following types of vehicles are in front of you.
As the sensor may not be able to correctly detect these types of vehicles, the proximity alarm (→P. 466) will not be activated, and an accident may result.

- Vehicles that cut in suddenly
- Vehicles traveling at low speeds
- Vehicles that are not moving
- Vehicles with small rear ends (trailers with no load on board etc.)
- Motorcycles traveling in the same lane

Conditions under which the vehicle-to-vehicle distance control may not function correctly

Apply the brakes as necessary in the following conditions as the radar sensor may not be able to correctly detect vehicles ahead, and an accident may result.

- When water or snow thrown up by the surrounding vehicles hinders the functioning of the sensor
- When your vehicle is pointing upwards (caused by a heavy load in the trunk etc.)
- When the road curves or when the lanes are narrow
- When steering wheel operation or your position in the lane is unstable

To ensure the radar sensor functions correctly

Do not do the following to the sensor or grille cover as doing so may cause the sensor not to function correctly and could result in an accident.

- Stick or attach anything to them
- Leave them dirty
- Disassemble, subject them to strong shocks
- Modify or paint them
- Replace them with non-genuine parts

Intuitive parking assist (if equipped)

Intuitive parking assist uses sensors in the front and rear of the vehicle to detect the distance between the vehicle and any obstacles, and informs the driver of this distance using the multi-information display, the touch screen, and warning beeps.
The system may be used at speeds less than about 6 mph (10 km/h).

Sensor types



1 Dual sensors

There are 4 sensors installed in the front bumper, two in the center section to detect obstacles directly ahead, and one in each corner of the bumper, to detect obstacles in those areas.
The dual sensors detect obstacles ahead of the vehicle, and judge whether avoidance maneuvers are necessary (whether the obstacle will come within 0.8 ft. (25 cm) of the vehicle), according to the distance between the obstacle and the vehicle, and the steering wheel position. The screen display and beeps will change accordingly.

2 Rear corner sensors

These sensors detect obstacles around the rear corners of the vehicle.

3 Back sensors

These sensors detect obstacles behind the vehicle.

n Intuitive parking assist switch

Press the intuitive parking assist switch to turn the system on/off.



1 The indicator light will come on when the intuitive parking assist is turned ON.

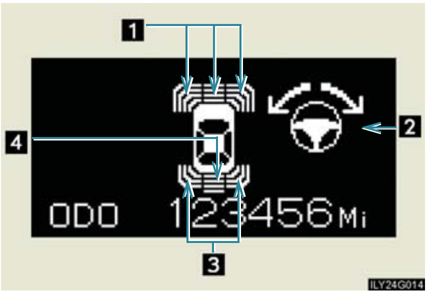
You can use the system if the engine switch is in the “IG-ON” mode.
If intuitive parking assist is ON, the system will operate under the following conditions;

- The dual sensors will operate if the shift lever is in a position other than “R” or “P”.
- All corner sensors and the back sensors will operate if the shift lever is in “R”.

Multi-information display and touch screen

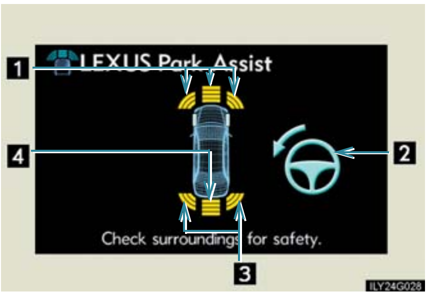
If the sensors detect an obstacle, it is displayed on the multi-information display in the instrument cluster.
You can change the conditions under which information is displayed on the touch screen. (→P. 150)

▶ Multi-information display



1 Dual sensor detection
2 Steering guide symbol
3 Rear corner sensor detection
4 Back sensor detection

▶ Touch screen



1 Dual sensor detection
2 Steering guide symbol
3 Rear corner sensor detection
4 Back sensor detection

If the intuitive parking assist is operated while the rear view monitor is showing, the intuitive parking assist will be shown in the upper right corner of the screen. (→P. 141)

Display distance and beeps

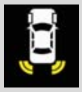
When the intuitive parking assist is activated, the approximate distance to the obstacle is displayed. Also, if an obstacle with which a collision is possible is detected, a warning beep will sound.

Dual sensor detection display and obstacle distance

Approximate distance to obstacle	Multi-information display	Touch screen	
		With beeps (danger of collision)	No beeps (no danger of collision)
3.0 ft. (100 cm) to 1.5 ft. (50 cm)	 (continuous)	 (continuous)	 (continuous)
1.5 ft. (50 cm) to 1.1 ft. (37.5 cm)	 (continuous)	 (continuous)	 (continuous)
1.1 ft. (37.5 cm) to 0.8 ft. (25 cm)	 (continuous)	 (continuous)	 (continuous)
Less than 0.8 ft. (25 cm)	 (blinking)	 (continuous)	—

• If the shift lever is in “R”, only the corner sensors will detect obstacles.

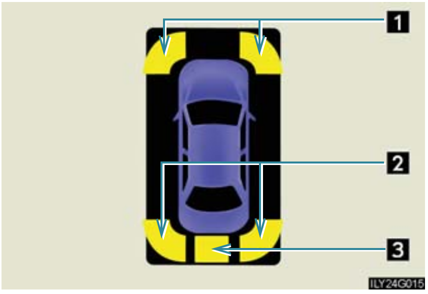
■ Rear corner sensor detection display and obstacle distance

Approximate distance to obstacle	Multi-information display	Touch screen
1.5 ft. (50 cm) to 1.1 ft. (37.5 cm)	 (continuous)	 (continuous)
1.1 ft. (37.5 cm) to 0.8 ft. (25 cm)	 (continuous)	 (continuous)
Less than 0.8 ft. (25 cm)	 (blinking)	 (continuous)

■ Back sensor detection display and obstacle distance

Approximate distance to obstacle	Multi-information display	Touch screen
5.0 ft. (150 cm) to 2.0 ft. (60 cm)	 (continuous)	 (continuous)
2.0 ft. (60 cm) to 1.4 ft. (45 cm)	 (continuous)	 (continuous)
1.4 ft. (45 cm) to 1.1 ft. (35 cm)	 (continuous)	 (continuous)
Less than 1.1 ft. (35 cm)	 (blinking)	 (continuous)

Touch screen (insert display)



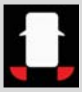
1 Dual sensor (corner) detection
2 Rear corner sensor detection
3 Back sensor detection

The tire display and the steering guide symbol will not be displayed.

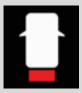
■ Dual sensor detection display and obstacle distance

Approximate distance to obstacle	With beeps (danger of collision)	No beeps (no danger of collision)
3.0 ft. (100 cm) to 1.5 ft. (50 cm)	 (blinking slowly)	 (continuous)
1.5 ft. (50 cm) to 1.1 ft. (37.5 cm)	 (blinking)	 (continuous)
1.1 ft. (37.5 cm) to 0.8 ft. (25 cm)	 (blinking rapidly)	 (continuous)
Less than 0.8 ft. (25 cm)	 (continuous)	—

Rear corner sensor detection display and obstacle distance

Approximate distance to obstacle	Touch screen
1.5 ft. (50 cm) to 1.1 ft. (37.5 cm)	 (blinking)
1.1 ft. (37.5 cm) to 0.8 ft. (25 cm)	 (blinking rapidly)
Less than 0.8 ft. (25 cm)	 (continuous)

Back sensor detection display and obstacle distance

Approximate distance to obstacle	Touch screen
5.0 ft. (150 cm) to 2.0 ft. (60 cm)	 (blinking slowly)
2.0 ft. (60 cm) to 1.4 ft. (45 cm)	 (blinking)
1.4 ft. (45 cm) to 1.1 ft. (35 cm)	 (blinking rapidly)
Less than 1.1 ft. (35 cm)	 (continuous)

Steering guide symbol

Displays the steering maneuvers required to avoid an obstacle. Move the steering wheel in the direction shown by the arrow.



1 Multi-information display

2 Touch screen

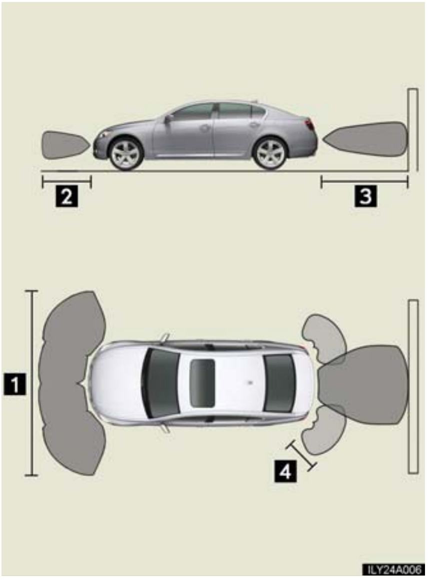
- The steering guide symbol only shows the maneuvers necessary to avoid an obstacle.
- When using the system, always check your surroundings for safety.

Beeps and obstacle distance

A beep sounds when an obstacle with which there is a danger of collision is detected. As the vehicle moves closer to the obstacle, the interval of the beep becomes shorter.

- When the following obstacle distances are reached, the beep changes from intermittent to continuous:
  - If the distance to the obstacle detected by the dual sensors or rear corner sensors is less than 0.8 ft. (25 cm).
  - If the distance to the obstacle detected by the back sensors is less than 1.1 ft. (35 cm).
- If obstacles are detected by the dual sensors in 2 places at once, or if both rear corner sensors detect obstacles at the same time, the system will sound a warning beep for the closer of the 2 obstacles.
- If multiple obstacles are detected in front and behind the vehicle at the same time, the warning beep will change in the following manner:
  - If an obstacle has been detected within 0.8 ft. (25 cm) of the front or rear of the vehicle (a continuous beep is sounding), and a new obstacle is detected near a different area of the vehicle, the warning beep will sound 6 beeps then one continuous beep.
  - If an obstacle has been detected within 0.8 ft. (25 cm) of the front or rear of the vehicle (a continuous beep is sounding), and a new obstacle is detected within 0.8 ft. (25 cm) of a different area of the vehicle, the warning beeps will sound 2 beeps then one continuous beep.
- You can change the volume of the warning beeps. (→P. 150)

Obstacle detection range



1 About 10.0 ft. (300 cm)
2 About 3.0 ft. (100 cm)
3 About 5.0 ft. (150 cm)
4 About 1.5 ft. (50 cm)

The detection area of the sensors is shown to the left.
If obstacles move too close to the sensors, they will not be detected.
If the malfunction screen is displayed, the dual sensor detection range will be shortened from 3.0 ft. (100 cm) to 1.5 ft. (50 cm).

If there is snow or mud on a sensor



1 Multi-information display

2 Touch screen

The same symbol will appear on the insert display.

The location of the affected sensor is displayed. Wipe off whatever is stuck to the sensor. (The above illustration shows something on the left front sensor.)

If the "CLEAN SONAR" message is displayed even though the sensor is not dirty or you have already cleaned it, there is most likely a sensor malfunction. Have the vehicle checked by your Lexus dealer.

If a sensor is malfunctioning



1 Multi-information display

2 Touch screen

The same symbol will appear on the insert display.

The location of the malfunctioning sensor is displayed. (The above illustration shows a malfunctioning left front sensor.) Have the vehicle checked by your Lexus dealer.

If the steering neutral position is unknown

After the battery has been reconnected, the steering sensor will need to be initialized. At this time, if the dual sensors detect an obstacle, the steering guide symbol and both arrows will be displayed.



1 Multi-information display

2 Touch screen

Use one of the following methods to initialize the steering sensor.

- With the vehicle stopped, turn the steering wheel all the way to the left, then the right. (The order is not important.)
- Drive for more than 5 minutes on an un-crowded road with as few curves and corners as possible.

If the steering guide symbol disappears, the steering sensor has been initialized. If the steering guide symbol does not disappear, have the vehicle checked by your Lexus dealer.

If the steering information is not being correctly received

If the system is unable to receive signals from the steering sensor, or there is a malfunction in the VGRS, the steering guide symbol and both arrows will flash if the dual sensors detect an obstacle.
In this case, have the vehicle checked by your Lexus dealer.



1 Multi-information display
2 Touch screen

If the steering guide symbol is on or flashing, the intuitive parking assist maximum detection range is reduced from 3.0 ft. (100 cm) to 1.5 ft. (50 cm).
The steering sensor malfunction warning display will be aligned with the intuitive parking assist detection display or the intuitive parking assist malfunction warning display.

Warning beep volume and touch screen settings

You can change the warning beep volume and touch screen operating conditions.

Push INFO to display the "Information" screen. Then touch LEXUS Park Assist.

Changing the warning beep volume

STEP 1 Touch Volume.

STEP 2 Adjust the beep volume, then touch OK.

Changing the touch screen operating conditions

STEP 1 Touch Display Setting.

STEP 2 Set one of the following operating condition, then touch OK.

- Static: Displays when the sensors detect an obstacle.
- Dynamic: Displays if maneuvers are required to avoid an obstacle (if an obstacle is likely to come within 0.8 ft. [25 cm] of the vehicle).
- Display OFF: Does not display the intuitive parking assist detection screen.

When an obstacle is detected while the rear view monitor is in use, the warning indicator will appear in the top right of the screen even Display OFF has been selected.

When the system malfunctions

- If a malfunction occurs and no obstacles have been detected, a warning is displayed, and a malfunction beep sounds for 7 seconds.
  If an obstacle has been detected, or another malfunction occurs in a different sensor, the malfunction beeps will not sound.
- In the following circumstances the displayed warning will disappear:
  - If you switch the screen to a different mode.
  - If you turn OFF the intuitive parking assist main switch.
  - If the vehicle speed exceeds 6 mph (10 km/h). Once the vehicle speed drops below 6 mph (10 km/h), the warning will be displayed again.
- If the malfunction screen is displayed, the detection range of the dual sensors is shortened. In this case, the necessity for obstacle evasion (whether the obstacle will come within 0.8 ft. (25 cm) of the vehicle or not) will not be calculated.

When using intuitive parking assist

- The sensors' detection areas and reaction times are limited. When moving forward or reversing, check the areas surrounding the vehicle (especially the sides of the vehicle) for safety, and drive slowly, using the brake to control the vehicle's speed.
  - The sensors' detection areas are limited to the areas around the vehicle's front and rear bumpers.
  - Depending on the shape of the obstacle and other factors, the detection distance may shorten, or detection may be impossible.
  - There will be a short delay between obstacle detection and display. Even at slow speeds, there is a possibility that the obstacle will come within 0.8 ft. (25 cm) of the vehicle before the display is shown and the warning beep sounds.
  - Braking distance may differ according to the road conditions (rain, gravel etc.).
  - It might be difficult to hear beeps due to the volume of audio system or air flow noise of air conditioning system.
  - For long obstacles such as walls, the obstacle warning may change as the obstacle gets closer.

- In the following situations, the intuitive parking assist may not function correctly, possibly leading to an accident.
  - There is ice, snow or mud on the sensors. (Wiping the sensors will resolve this problem.)
  - The sensor area is frozen. (Thawing the area will resolve this problem.)
    In especially cold weather, if a sensor is frozen the screen may show an abnormal display, or obstacles may not be detected.
  - The vehicle angle is especially wide.
  - In harsh sunlight or intense cold weather.
  - When driving on bumpy, sloped or gravel roads, or over grass.
  - If there is something producing ultrasonic waves nearby, such as another vehicle's horn, motorcycle engine noise, air braking sound from heavy-duty vehicles, or another vehicle using the intuitive parking assist.
  - In heavy rain, or if water is splashed on the sensors.
  - If a commercial fender pole or radio antenna is installed.
  - If towing eyelet is installed on your vehicle.
  - If moving towards a high curb or a curb corner.
  - Objects such as signs may cause the detection distance to shorten.
  - The area directly under the bumpers is not detected.
    Objects lower than the sensors or thin stakes etc. may be detected initially, but as they draw closer, they may cease to be detected.
  - If obstacles draw too close to the sensor.

Obstacles that may not be detected correctly

The following obstacles may not be detected.

- Thin objects such as wire, fencing or rope.
- Objects that absorb sound waves, such as cotton or snow.
- Objects with sharp corners.
- Objects where the upper section projects out over the lower section.
- Low objects.

Certification

▶ For vehicles sold in the U.S.A.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions; (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

▶ For vehicles sold in Canada

This ISM device complies with Canadian ICES-001. Cet appareil ISM est conforme a la norme NMB-001 du Canada.

⚠ CAUTION

Caution while driving

To reduce the chance of injury in the event of an accident or sudden stop, keep the switch box closed.

When using intuitive parking assist

Observe the following precautions.

- The back sensors and rear corner sensors do not judge whether there is danger of a collision, nor whether the obstacle can be avoided using the steering wheel. When reversing, always check your surroundings and behind the vehicle for safety.
- The steering guide symbol (arrow) is an approximate guide regarding obstacles. It is not driving instructions. When moving forward or reversing, always check your surroundings for safety and drive carefully.
- Do not install accessories within the sensors' detection areas, as this may cause the intuitive parking assist to function incorrectly, possibly leading to an accident.

NOTICE

- **When using intuitive parking assist**

  In the following situations, the system may not function correctly due to a sensor malfunction etc. Have the vehicle checked by your Lexus dealer.

  - A beep does not sound when you turn the main switch ON.
  - The intuitive parking assist operation display flashes, and a beep sound when no obstacle has been detected.
  - If the area around a sensor collides with something, or is subjected to strong impact.
  - If the bumper collides with something.
  - If the display shows continuously without a beep.

- **When changing tires**

  If you install tires of a size other than that recommended by the manufacturer, the system will be unable to correctly detect steering wheel movement. Always use tire sizes recommended by the manufacturer.

- **When washing the vehicle**

  When washing the vehicle using high pressure cleaning equipment, do not spray water directly on the sensors. Subjecting the sensors to high pressure impact may cause a malfunction.

Rear view monitor system

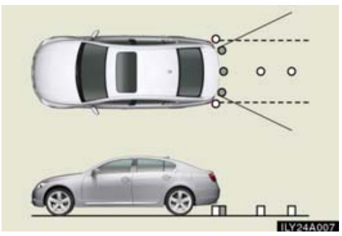
The rear view monitor system assists the driver by displaying an image of the view behind the vehicle while reversing. The image is displayed in reverse on the screen. This allows the image to appear in the same manner as that of the rear view mirror.



Rear view image is displayed when the shift lever is in “R”.

If you move the lever out of “R”, the screen returns to the previous one.

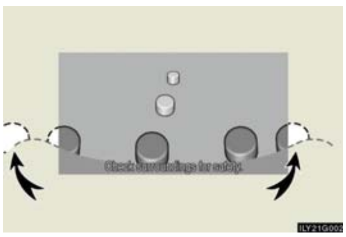
■ Displayed area



The area covered by the camera is limited. Objects which are close to either corner of the bumper or under the bumper cannot be seen on the screen.

The area displayed on the screen may vary according to vehicle orientation or road conditions.

▶ Corner of bumper



Rear view monitor system camera



In the following cases, it may be difficult to see the images on the screen, even when the system is functioning correctly.

- In the dark (e.g. at night).
- If the temperature near the lens is extremely high or low.
- If water droplets get on the camera, or when humidity is high (e.g. when it rains).
- If foreign matter (e.g. snow or mud) get on the camera lens.
- If the sun or headlights are shining directly into the camera lens.

Smear effect



If a bright light (for example, sunlight reflected off the vehicle body) is picked up by the camera, a smear effect* peculiar to the camera may occur.

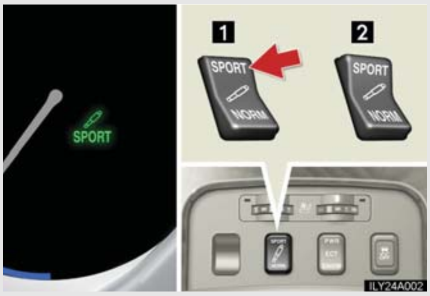
*: Smear effect—A phenomenon that occurs when a bright light (for example, sunlight reflected off the vehicle body) is picked up by the camera; when transmitted by the camera, the light source appears to have a vertical streak above and below it.

CAUTION

- **When using the rear view monitor system, observe these precautions to avoid an accident that could result in death or serious injuries.**
  - Never depend solely on the monitor system when reversing.
  - Always check visually and with the mirrors to confirm your intended path is clear.
  - Depicted distances between objects and flat surfaces differ from actual distances.
  - Do not use the system if the trunk is open.
- **Conditions which may affect the rear view monitor system**
  - If the back of the vehicle is hit, the camera's position and mounting angle may change. Contact your Lexus dealer.
  - Rapid temperature changes, such as when hot water is poured on the vehicle in cold weather, may cause the system to function abnormally.
  - If the camera lens is dirty, it cannot transmit a clear image. Rinse with water and wipe with a soft cloth. If extremely dirty, wash with a mild cleanser and rinse.
  - The displayed image may be darker and moving images may be slightly distorted when the system is cold.

AVS (Adaptive Variable Suspension System) (GS430)

AVS controls the suspension according to the road and driving conditions. Selecting an optimum driving mode allows good vehicle posture and steering wheel operation in conjunction with VGRS, EPS and active stabilizer suspension system.



1 Sports mode

For winding mountain road driving or high speed driving.

2 Normal mode

For normal driving.

Driving assist systems

To help enhance driving safety and performance, the following systems operate automatically in response to various driving situations. Be aware, however, that these systems are supplementary and should not be relied upon too heavily when operating the vehicle.

ABS (Anti-lock Brake System)

Restrains the vehicle from slipping when driving on slick road surfaces or in the event of sudden braking.

BA (Brake Assist)

Generates an increased level of braking force after the brake pedal is depressed, when the system detects a panic stop situation.

VSC (Vehicle Stability Control)

Helps the driver to control skidding when swerving suddenly or turning on slippery road surfaces.

TRAC (Traction Control)

Maintains drive power and prevents the rear wheels from spinning when starting the vehicle or accelerating on slippery roads.

Hill-start assist control

Helps prevent the vehicle from rolling backwards when starting on an incline or slippery slope. It operates for approximately 5 seconds at maximum.

VGRS (Variable Gear Ratio Steering) (GS430)

Adjusts the wheel turning angle in accordance with the vehicle speed and steering wheel movement.

EPS (Electric Power Steering)

Employs an electric motor to reduce the amount of effort needed to turn the steering wheel.

Active stabilizer suspension system (GS430, if equipped)

Turns at smaller angles to maintain the stable vehicle posture.

- **VDIM (Vehicle Dynamics Integrated Management) (GS430)**

  Provides integrated control of the ABS, VSC, TRAC, hill-start assist control, VGRS and EPS systems.
  Maintains vehicle stability when swerving on slippery road surfaces by controlling the brakes, engine output, and the movement of the front wheels.

- **PCS (Pre-Collision System) (if equipped)**

  →P. 165

When the VSC/TRAC/hill-start assist control systems are operating



If the vehicle is in danger of slipping, rolling backwards when starting on an incline, or if the rear wheels (2WD models) or all wheels (4WD models) spin, the slip indicator light flashes to indicate that the VSC/TRAC/hill-start assist control systems have been engaged.

A buzzer (intermittent) sounds to indicate that VSC is operating.

The stop lights and high mounted stoplight turn on when the hill-start assist control system is operating.

GS430: The slip indicator light flashes as well when ABS is operating.

To disable TRAC and/or VSC

If the vehicle gets stuck in fresh snow or mud, TRAC and VSC may reduce power from the engine to the wheels. You may need to turn the system off to enable you to rock the vehicle in order to free it.

Turning off TRAC only



Quickly push and release the button to turn off TRAC.

The slip indicator light should come on.

Push the button again to turn the system back on.

Turning off both TRAC and VSC



Push and hold the button for more than 3 seconds while the vehicle is stopped to turn off TRAC and VSC.

The slip and VSC OFF indicator light should come on.

Push the button again to turn the system back on.

Automatic reactivation of TRAC and VSC

Turning the engine switch OFF after turning off the TRAC and VSC systems will automatically re-enable them.

Automatic TRAC reactivation

If only the TRAC system is turned off, the TRAC system will turn on when the vehicle speed increases.

Automatic TRAC and VSC reactivation

If only the both TRAC and VSC systems are turned off, the systems will not turn on even when the vehicle speed increases.

Sounds and vibrations caused by the ABS, BA, VSC, TRAC, hill-start assist control and VGRS systems

- A sound may be heard from the engine compartment when the engine is started or just after the vehicle begins to move. This sound does not indicate that a malfunction has occurred in any of these systems.
- Any of the following conditions may occur when the above systems are operating. None of these indicates that a malfunction has occurred.
  - Vibrations may be felt through the vehicle body and steering.
  - A motor sound may be heard after the vehicle comes to a stop.
  - The brake pedal may pulsate slightly after the ABS is activated.
  - The brake pedal may move down slightly after the ABS is activated.

Hill-start assist control is operational when

- The shift lever is in the “D” or “S” position.
- The brake pedal is not depressed.

VGRS is disabled in the following situations (GS430)

- During stopping or the steering wheel has been moved for a long time while driving at lower speeds.
- After the engine is restarted at less than -22°F (-30°C).

Reduced effectiveness of EPS

The effectiveness of EPS is reduced to prevent the system from overheating when there is frequent steering input over an extended period of time. The steering wheel may feel heavy as a result. Should this occur, refrain from excessive steering input or stop the vehicle and turn the engine OFF. The system should return to normal within 10 minutes.

CAUTION

- **The ABS does not operate effectively when**
  - The limits of tire gripping performance have been exceeded.
  - The vehicle hydroplanes while driving at high speed on the wet or slick road.
- **Stopping distance when the ABS is operating on the wet or slick roads**

  The ABS is not designed to shorten the vehicle's stopping distance. Always maintain a sufficient distance from the vehicle in front of you in the following situations.
  - When driving on dirt, gravel or snow-covered roads
  - When driving with tire chains
  - When driving over bumps in the road
  - When driving over roads with potholes or roads with uneven pavement
- **TRAC may not operate effectively when**

  Directional control and power may not be achievable while driving on slippery road surfaces, even if the TRAC is operating.
  Do not drive the vehicle in conditions where stability and power may be lost.

CAUTION

- **The hill-start assist control may not operate effectively when**
  - On steep inclines.
  - On icy surfaces.
- **When the VSC is activated**

  The slip indicator light flashes and a warning buzzer sounds. Always drive carefully. Reckless driving may cause an accident. Exercise particular care when the indicator light flashes and a buzzer sounds.
- **When TRAC and VSC are off**

  Be especially careful and drive at a speed appropriate to the road conditions. As these are systems to ensure vehicle stability and driving force, do not turn off TRAC and VSC unless necessary.
- **Replacing tires**

  Make sure that all tires are of the same size, brand, tread pattern and total load capacity. In addition, make sure that the tires are inflated to the specified tire pressure level.

  The ABS and VSC will not function correctly if different tires are fitted on the vehicle.
  Contact your Lexus dealer for further information when replacing tires or wheels.
- **Handling of tires and suspension (GS430)**

  Using tires with any kind of problem or modifying the suspension will affect the VDIM, and may cause the system to malfunction.

PCS (Pre-Collision System) (if equipped)

Safety systems such as the brakes and seat belts are automatically engaged to lessen impact and injuries to occupants as well as vehicle damage when the radar sensor detects an unavoidable frontal collision.

n Pre-collision seat belts (front seats only)

The seat belts are immediately retracted as the effect of the pretensioner is increased (→P. 35), to provide even greater constraining force to protect the driver and passengers. In the event of sudden braking or skidding, the system will operate even if no obstacle has been detected.

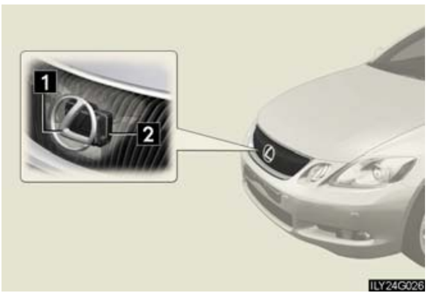
n Pre-collision brake assist

Applies greater braking force in relation to how strongly the brake pedal is depressed.

n Pre-collision AVS

If the system determines that the collision is unavoidable, the operation of AVS (→P. 158) helps prevent the vehicle front from going down when hard brakes are applied.

Radar sensor



Detects vehicles or other obstacles on or near the road ahead and determines whether a collision is imminent based on the position, speed, and heading of the obstacles.

1 Grille cover
2 Radar sensor

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n Obstacles not detected

The sensor cannot detect plastic obstacles such as pylons. There may also be occasions when the sensor cannot detect pedestrians, animals, bicycles, motorcycles, trees, or snowdrifts.

The pre-collision system is operational when

- Seat belt (linked to the radar sensor)
  - Vehicle speed is above 3 mph (5 km/h).
  - The speed at which your vehicle is approaching the obstacle or oncoming vehicle exceeds 18 mph (30 km/h).
  - The front occupants are wearing a seat belt.
- Seat belts (linked to brake operation)
  - Vehicle speed exceeds 9 mph (15 km/h).
  - The system detects sudden braking or skidding.
  - The front occupants are wearing a seat belt.
  - VSC is not turned off.
- Brake Assist
  - Vehicle speed is above 18 mph (30 km/h).
  - The speed at which your vehicle is approaching the obstacle or oncoming vehicle exceeds 18 mph (30 km/h).
  - The brake pedal is depressed.
- AVS
  - Vehicle speed is above 3 mph (5 km/h).
  - The speed at which your vehicle is approaching the obstacle or oncoming vehicle exceeds 18 mph (30 km/h).

Conditions that may trigger the system even if there is no danger of collision

- When there is an object by the roadside at the entrance to a curve
- When passing an oncoming vehicle on a curve
- When driving over a narrow iron bridge
- When there is a metal object on the road surface
- When driving on an uneven road surface
- When passing an oncoming vehicle on a left-turn
- When your vehicle rapidly closes on the vehicle in front

When the system is activated in the situations described above there is also a possibility that the seat belts will retract quickly and the brakes will be applied with a force greater than normal. When the seat belt is locked in the retracted position, stop the vehicle in a safe place, release the seat belt and refasten.

When there is a malfunction in the system

Warning lights and/or warning messages will turn on or flash. (→P. 451, 458)

CAUTION

Handling the radar sensor

Observe the following to ensure the pre-collision system can function effectively.

- Keep the sensor and front grille clean at all times.
  Clean the sensor and front grille with a soft cloth so you do not mark or damage them.
- Do not subject the sensor or surrounding area to a strong impact.
  If the sensor moves even slightly off position, the system may malfunction. If the sensor or surrounding area are subject to a strong impact, always have the area inspected and adjusted by a Lexus dealer.
- Do not disassemble the sensor.
- Do not attach accessories or stickers to the sensor, grille cover or surrounding area.

Limitations of the pre-collision system

Do not rely on the pre-collision system. Always drive safely, taking care to observe your surroundings and checking for any obstacles or other road hazards.